REMARKS

Claims 1-37 are pending in the application. Claims 30-32 are amended herein. Claims 38-40 are new.

Claims 1, 18-20, 28, and 33 are rejected for obviousness over Eck et al. ("Eck") in view of DeRose et al. ("DeRose") and Konno. The Examiner cites to Konno for its purported teachings pertaining to boundary curves, and to Eck and DeRose for their purported teachings pertaining to subdividing. Yet, there is no teaching or suggestion in any of these references, considered singly or in combination, of "maintaining boundary vertices of child polygons on one or more of the boundary curves" as required by these claims.

More specifically, Konno describes a method to compute Gregory patches from a network of NURBS curves, where a NURBS curve comes from a certain class of freeform curves. Konno, Col.2, ll.30-40. In order to use the Konno method, certain conditions must occur on the surface to guarantee that two patches which meet at the same curve are continuous. Konno, Col. 7, ll.63-64, Col.8, ll.34-35. However, there is no suggestion in Konno for subdividing the Gregory patches into child polygons such that boundary vertices of child polygons are maintained on one or more of the NURBS boundary curves. The Examiner cites to Eck and DeRose for their teachings regarding subdivision, but as in Konno, there is no teaching or affirmative suggestion in either of these references for maintaining the boundary vertices of child polygons on boundary curves. Therefore, in any combination of the references that might theoretically ensue, a requirement of the claims would not be met.[1]

To illustrate this point graphically, reference is made to Figures A and B, which are attached to this paper as page 12. Figure A is a magnified view of the top portion of Fig. 8 of Konno, which shows a Gregory patch between NURBS boundaries 10, 20, and 30. As shown in Figure A, this Gregory patch is a grid-like structure indicated by the dashed lines. Assuming for the sake of argument this grid-like structure corresponds to the first mesh representation recited in the claims, the vertices marked with the squares correspond to the claimed boundary vertices, and the vertices marked with the circles correspond to the claimed interior vertices.

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[1] Applicant believes the NURBS boundary/Gregory patch technique of Konno is incompatible with that of Eck and DeRose, so that any combination of these references is theoretical.

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Figure B illustrates the grid-like structure of Figure A after one level of subdivision to form a second mesh representation. In this second mesh representation, the boundary vertices of the child polygons are identified with ellipses. As illustrated, none of these boundary vertices lie on the boundary curves 10, 20, 30, and there is nothing in any of the cited references that suggest or require doing so.

Therefore, the rejection is contrary to well-settled Federal Circuit law which holds that it is improper to advance an obviousness rejection on the basis of a combination of references absent a specific teaching or motivation to combine the references in the manner claimed. See, e.g., ACS Hospital Systems, Inc. v. Montefiore Hospital, 221 USPQ 929, 932 (Fed. Cir. 1984). To hold otherwise is to engage in impermissible hindsight reconstruction of the claims using the teachings of the invention as a guide. See W.L. Gore & Associates, Inc. v. Garlock, Inc., 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). Accordingly, Applicant respectfully submits that the obviousness rejection of claims 1, 18-20, 28, and 33 should be withdrawn.

In item #4 of the Office Action, the Examiner objects to claims 26, 28, 30-32, and 36 as being multiple dependent claims dependent on another multiple dependent claim. However, as to claims 26, 28, and 36, this characterization is in error since these claims do not have two levels of multiple dependency. As to claims 30-32, Applicant has split each of these claims in two by adding new claims 38, 39, and 40, thereby eliminating the second levels of multiple dependency.
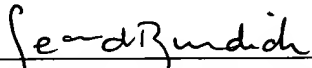
In view of all of the above, it is respectfully submitted that all claims are allowable. The Examiner is therefore requested to allow all claims and pass this application to issuance.

In papers enclosed with this Response, Applicant has included authorization to charge Howrey Deposit Account No. 08-3038 for a two-month extension fee. Applicant believes no other fees are due. If any additional fees associated with this Response are in fact due, the

Commissioner is hereby authorized to charge Howrey Deposit Account No. 08-3038 for the same referencing Howrey Dkt. No. 01339.0005.NPUS02.

Respectfully submitted,

Dated: October __7__, 2003

_____Sean D. Burdick_____

Sean D. Burdick, Reg. No. 51,513

HOWREY SIMON ARNOLD & WHITE, LLP
301 Ravenswood Avenue
Box No. 34
Menlo Park, CA 94025
Fax No. (650) 463-8400
Telephone No. (949) 759-5219